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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,226	12/14/2000	John A. Trezza	LSC-141J	5664

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EXAMINER

TRAN, DZUNG D

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 12/01/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/737,226

Applicant(s)

TREZZA ET AL.

Examiner

Dzung D Tran

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5, 6 & 7. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Specification***

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 10, 11, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozeki et al. US patent no. 6,317,242 *in view of Auracher et al.*

Regarding claim 1, Ozeki discloses apparatus on a shared substrate multi-wavelength optical communication system (figures 1-4) comprising:

a number of emitters (42a, 43a, 72a) each of which emits radiation at a different wavelength (col. 7, lines 50-52, col. 8, lines 7-28, 62-65);

a plurality of detectors (42b, 43b, 72b) each of which senses radiation at a different wavelength corresponding to the radiation from one of said emitters; and

an optical bus (same as shared waveguide) (20, 60, col. 7, line 17, col. 8, line 33) on the same substrate for transmitting emitted radiation to said detectors. Although Ozeki does not specific disclose optical bus including a scattering medium, however figure 3 clearly shown the optical signals scattered or transmitted to the signal light input/output portion 61 in different directions. Therefore, if it not inherent, it would have been obvious that the optical bus of Ozeki has the same function as the claimed waveguide that is scattering the optical signal. Furthermore, Auracher, in the same field

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of endeavor, discloses an apparatus having an emitter and a detector wherein the signals transmit from the emitter to detector over a scattering medium (figures 1a, 1b, col. 4, lines 1-53). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include a scattering medium of Auracher in the apparatus of Ozeki. One of ordinary skill in the art would have been motivated to do this in order to transmit the optical signal in different directions, thus it allows optical signals transmit to different detectors.

Regarding claims 10-12, Ozeki further discloses emitters and detectors are disposed on a chip and in a generally planar array (figure 4).

Regarding claims 15 and 16, Ozeki further discloses an optical bus (same as shared waveguide) is disposed on an integrated circuit chip (figure 4).

3. Claims 2-9 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozeki et al. US patent no. 6,317,242 in view of Frankel US patent no. 6,096,496.

Regarding claim 2, Ozeki does not disclose emitter is a vertical cavity surface emitting laser. Frankel, from the same field of endeavor, discloses a vertical cavity surface emitting laser (col. 18, lines 7-8, 21-22, col. 28, lines 15-67). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Frankel in the apparatus of Ozeki. One of ordinary skill in the art would have been motivated to do this since vertical cavity surface emitting laser offers the advantage of low-cost light sources capable of providing high modulation rates and long transmission distances.

Regarding claim 3, Ozeki further discloses emitter includes a scattering grating for redirecting the emitted radiation laterally through said shared waveguide (col. 18, lines 26-28).

Regarding claims 4 and 5, Ozeki further discloses detector includes a filter for selectively passing one of said wavelengths from said emitters and filter includes a Bragg grating.

Regarding claims 6 and 9, Ozeki further discloses shared waveguide scatters the lateral leakage radiation from said emitters

Regarding claims 7 and 8, Ozeki further discloses emitter includes an LED (col. 16, lines 25, 51, col. 22, lines 35- 49) or an edge emitting laser (col. 28, 9-10).

Regarding claims 13 and 14, Ozeki further discloses the chip is gallium arsenide and silicon chip (col. 14, lines 24-44, col. 22, line 10).

Regarding claims 15, 16, 17, 18, 19 and 20, whether the reflective medium contain the scattering radiation or has a lower index of refraction and where is the shared waveguide disposed on the chip is merely an engineer design choices.

### **Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Auracher et al. U.S. patent no. 4,548,464. Frequency analyzer in planar waveguide technology and method of manufacture.

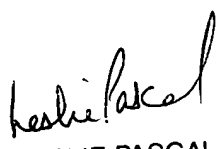
- b. Nicole U.S. patent no. 5,469,286. Optoelectronic installation for the interconnection of electronic module
- c. Erteza U.S. patent no. 5,706,114. Polyhedral integrated and free space optical interconnection

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Tran whose telephone number is (703) 305-0932.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jason Chan, can be reached on (703) 305-4729.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

  
LESLIE PASCAL  
PRIMARY EXAMINER